



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1999-0197

August 11, 1999

Ms. Sue Richardson
District Manager
Bureau of Land Management
Coos Bay District
1300 Airport Land
North Bend, Oregon 97459-2000

Re: Section 7 Consultation on Actions Affecting Umpqua River Cutthroat Trout, Oregon
Coast Coho Salmon, and Oregon Coast Steelhead

Dear Ms. Richardson:

This responds to your July 21, 1998 letter, requesting consultation on one action that the Bureau of Land Management (BLM) has determined is likely to adversely affect (LAA) Umpqua River cutthroat trout (*Oncorhynchus clarki clarki*), and two actions the BLM determined would not likely adversely affect (NLAA) Umpqua River cutthroat trout. The July 21, 1998, letter was accompanied by biological assessment (BA). It was noted in the BA that the BLM's effects determinations for the proposed actions on Oregon Coast coho salmon (*O. kisutch*) and Oregon Coast steelhead (*O. mykiss*) are the same as for Umpqua River cutthroat trout. This is because the habitat used by these species overlaps that of Umpqua River cutthroat trout and the BA assesses the effects of the proposed actions on this habitat. The BA describes the environmental baseline and effects of three proposed timber sales: The Sawyer Bridge/Bridge Toll, Sagaberd, and Cedar House timber sales, which are proposed for the Middle Umpqua River and Mill Creek watersheds. The purpose of this letter is to document our biological and conference opinion (BO) that the proposed timber sales are not likely to jeopardize the continued existence of Umpqua River cutthroat trout, Oregon Coast coho salmon, and Oregon Coast steelhead, listed under the Endangered Species Act (ESA), as explained below. This consultation is undertaken pursuant to Section 7(a)(2) of the Endangered Species Act (ESA) and its implementing regulations, 50 CFR Part 402.

The Umpqua River cutthroat trout (UC cutthroat) was listed as endangered under the ESA by NMFS on August 9, 1996 (61 FR 41514). Critical habitat for this species was designated on January 9, 1998 (63 FR 1388). On April 5, 1999, NMFS proposed to reclassify UR cutthroat trout as a candidate species because recent genetic studies have shown that the Umpqua River Evolutionarily Significant



Unit¹ (ESU) is likely a portion of a larger Oregon Coast cutthroat trout ESU which is not thought to be in danger of extinction (April 5, 1999, 64 FR 16397). UR cutthroat trout, however will remain “endangered” until a final rule is published (in roughly one year). The Oregon Coast coho salmon (OC coho salmon) was listed as threatened on August 10, 1998 (63 FR 42587), and critical habitat for this ESU was proposed on May 10, 1999 (64 FR 24998). Oregon Coast steelhead (OC steelhead) in the Umpqua River basin are currently considered by NMFS to be candidate species under the ESA (63 FR 13347).

Because of the OC coho salmon listing and the candidate status of OC steelhead, NMFS considered the BLM’s LAA determination for these species simultaneously with UR cutthroat trout in this consultation. This is because NMFS adopted a habitat-based “jeopardy” analysis (NMFS 1997a, 1997b, and 1997c) and OC coho salmon and OC steelhead habitat is completely overlapped by that of UR cutthroat trout in these proposed actions.

Coos Bay BLM personnel made the effects determinations in the BA following procedures described in NMFS (1997a, 1997b, and 1997c). The effects of the individual actions proposed in the BA were evaluated by BLM biologists at the project scale using criteria based upon the biological requirements of UR cutthroat trout, OC coho salmon, OC steelhead and other potentially affected anadromous salmonids and the Aquatic Conservation Strategy (ACS) objectives of the Northwest Forest Plan (NFP) (USDA and USDI 1994). The BLM biologists also evaluated the likely effects of the proposed actions on the watershed scale, and in the long-term in the context of watershed processes. The Level 1 consultation team for the Coos Bay BLM District has defined “long-term” for ESA consultation purposes as a decade, while short-term effects would occur over a shorter duration, most typically a few months to a few years. The Level 1 consultation team for the Coos Bay BLM District met on July 14, 1998, to review the BLM’s effect determinations and documentation of ACS consistency for the timber sales. The team concurred on the effect determinations and ACS consistency analyses.

Proposed Actions

The “proposed actions” are the sale and harvest of timber in the Middle Umpqua River and Mill Creek fifth field hydrologic unit codes² (HUC) of the mainstem Umpqua River in Douglas County, Oregon.

¹For the purposes of conservation under the Endangered Species Act, an Evolutionarily Significant Unit is a distinct population segment that is substantially reproductively isolated from other conspecific population units and represents an important component in the evolutionary legacy of the species.

²Stream drainages can be arranged in nested hierarchies in which a large drainage is composed of smaller drainages. The BLM uses a system in which these drainages are numbered in a computer data base for analytical purposes. The numerical identifier of a particular drainage in this data base (which is located in a specific column or “field” in the data base) is called its hydrologic unit code, or HUC. This HUC increases with decreasing drainage area, thus a fourth field HUC (such as the Main Umpqua River) is composed of several fifth field HUCs (such as the Middle Umpqua River, Mill Creek, etc.) and so on. The Northwest Forest Plan determined that the scale for Watershed Analyses should be 20 to 200 square miles, which often

Specifically, in the Middle Umpqua River fifth field HUC (a fifth field HUC is considered a “watershed” for consultation purposes), the Sawyer Bridge/Bridge Toll timber sale (Bridge) is proposed for the Sawyer Creek and Butler Creek sixth field HUCs (a “drainage”, as defined in BLM (1995c and 1998) is considered a “subwatershed” for consultation purposes). The majority of the Sagaberd timber sale (Sagaberd) is proposed for the Luchsinger Creek and Wells Creek subwatersheds, and Cedar House timber sale (House) is proposed for the Paradise Creek and Butler Creek subwatersheds. In the Mill Creek watershed, a portion of Sagaberd is proposed for the Lower Camp Creek subwatershed. The Paradise Creek subwatershed is a NFP Tier 1 Key Watershed. The environmental assessments (EAs) for the timber sales, which were appended to the BLM’s BA, have detailed information on each of the sales, but brief summaries are provided below.

Bridge. In Bridge, the BLM proposes to regeneration harvest a total of 84 acres of timber in 11 units of the General Forest Management Area (GFMA), a subdivision of the NFP Matrix land allocation. All of the harvest would be in the Sawyer Creek subwatershed, while a retention unit would be partially located within the Butler Creek subwatershed. Yarding of harvested timber would be accomplished by partial (one-end) or full suspension cable-yarding (except for temporary roads and landings, which would be tractor-yarded). About 2 acres of harvested timber would be full-suspension yarded above Riparian Reserves (RRs), eliminating the need for additional temporary road construction and road renovation. About 800 feet of temporary road would be constructed and about 3.4 miles of existing ridge-top road would be renovated, including the replacement of several culverts. No fish-bearing streams occur within the sale area; RRs around the streams in the sale area would be the one site-potential tree height of 200 feet. Most of the harvested acreage would be broadcast or pile burned to prepare the areas for planting seedlings. Burning would occur under conditions which would make unintentional spread of fire unlikely.

Sagaberd. In Sagaberd, the BLM proposes to regeneration harvest 318 acres and commercially thin 12 acres of GFMA land. In addition, commercial thinning from below, termed “density management” which retains about 70 of the largest trees per acre, would occur on 53 acres of RR. Within the Middle Umpqua River watershed, about 5 acres of the commercial thinning would occur within the Luchsinger Creek subwatershed as well as 36 acres of the regeneration harvest; the remainder of the harvest would occur within the Wells Creek subwatershed. About 3 acres of regeneration harvest and about 7 acres of commercial thinning would occur in the Lower Camp Creek subwatershed of the Mill Creek watershed. Yarding of harvested timber would be accomplished by helicopter, partial (one-end) suspension cable-yarding, or full suspension cable-yarding (except for temporary roads and landings, which would be tractor-yarded). Some full-suspension yarding would occur above RRs of non-fishbearing streams. About 0.8 mile of semi-permanent road would be constructed (all within the Middle Umpqua watershed), and about 3 miles of existing ridge-top road would be renovated, but no culverts would be replaced. Fish-bearing streams within the sale area would receive a two site-

corresponds to a fifth field HUC.

potential tree height RR (400 feet) and a 200-foot no-cut buffer in density management areas. Riparian Reserves on non-fishbearing streams would be one site-potential tree height, and would receive a 50-foot no-cut buffer for density management. Most of the regeneration-harvested acreage would be broadcast or pile burned to prepare the areas for seedling planting. Burning would occur under conditions which would make unintentional spread of fire unlikely.

House. In House, the BLM proposes to regeneration harvest 111 acres of GFMA land, about 17 acres of which would be in the Butler Creek subwatershed, and the remainder in the Paradise Creek subwatershed. Roughly 96 acres of the harvest would be yarded by helicopter, while 15 acres would be one-end suspension cable-yarded and two log-landings (total size 2.2 acres) would be tractor-yarded. No new roads would be constructed but about 3.4 miles of existing ridge-top road would be renovated (without culvert replacement). Fish-bearing streams in the sale area would have RR buffers of two site-potential trees (420 feet); buffers on non-fishbearing streams would be half this width. All of the harvested acreage would be broadcast or pile burned to prepare the areas for seedling planting. Burning would occur under conditions which would make unintentional spread of fire unlikely.

Biological Information and Critical Habitat

The biological requirements (including the elements of critical habitat) of each of the ESUs are discussed in NMFS (1997a, 1997b and 1997c). Environmental baseline conditions in the Umpqua Basin are discussed in Johnson *et al.* (1994), pages 2-7 of NMFS (1997b) and pages 13-14 of NMFS (1997c). Cumulative effects as defined under 50 CFR 402.02 are discussed for the Umpqua Basin on pages 40-43 of NMFS (1997c). These respective analyses are incorporated herein by this reference. NMFS is not aware of any newly available information that would materially change these previous analyses of biological requirements, environmental baseline or cumulative effects for the purpose of this Opinion. Some general biological information is provided below.

UR cutthroat trout inhabit the Umpqua River Basin of southwest Oregon. The ESU consists of resident, potamodromous, and anadromous life histories. Individuals of all three forms have the potential to inhabit the Middle Umpqua River and Mill Creek watersheds discussed in this BO. UR cutthroat trout are known to be year-around inhabitants (using rearing, feeding, spawning, and incubation habitat) of the subject watershed. The watershed is also likely used as a migration corridor by both adults and juveniles of the ESU. Historically, adult anadromous UR cutthroat trout passed Winchester Dam, on the North Umpqua River, predominantly from late June through November with peaks in mid-July and mid-October, while juvenile outmigration is thought to occur chiefly from March through October (Johnson *et al.* 1994).

OC coho salmon are an anadromous species which typically have a three-year life cycle and occurs in the subject watershed. Adult OC coho salmon spawn in the late fall and winter, with fry emergence occurring the following spring. Juvenile coho salmon rear for about a year in natal streams and then outmigrate to the ocean as smolts in the spring. Some male coho return to freshwater to spawn in fall and winter of the same year as their smolt migration, but the majority of adult OC coho salmon do not return to spawn until having spent about 18 months in the ocean. Thus, an active OC coho salmon stream would be used for some life-stage (i.e. rearing, feeding, spawning, and incubation) year-round.

OC steelhead may exhibit anadromy or freshwater residency. Resident forms are usually referred to as rainbow trout while anadromous life forms are termed steelhead; both forms likely occur in all four subject watersheds. Steelhead typically migrate to marine waters as smolts in the spring after spending two years in freshwater. They reside in marine waters for two to three years prior to returning to their natal stream to spawn as 4- or 5- year-olds. Unlike salmon, steelhead do not necessarily die after spawning and may survive to spawn two or more times. Most or all adult steelhead in the four subject watersheds likely enter freshwater in the late fall or winter, and spawn in the late winter to early spring. Thus, as with OC coho salmon, an active OC steelhead stream would be used for some life-stage (i.e. rearing, feeding, spawning, and incubation) year-round.

Although general information about the populations of anadromous fish within the Middle Umpqua River and Mill Creek watersheds is available (e.g., those streams likely inhabited) specific information on the size and health of anadromous fish populations in the Umpqua Basin is often lacking or incomplete. For example, the BLM's Watershed Analyses (WAs) for the Middle Umpqua River watershed (BLM 1995a, 1995b, and 1997) or the Mill Creek Watershed (BLM 1995c) do not provide specific information on fish populations size, trends, or stream mileage inhabited by anadromous fish or resident fish. However, these reports do document that scores of miles of habitat are available in the watershed for anadromous and resident salmonids. Because of the general paucity of the type of knowledge which would allow the BLM and NMFS to assess the relative health of anadromous salmonid populations on a stream or watershed scale, and the fact that all fish species, populations, and individuals depend on adequate habitat, the NMFS uses a habitat-based system in ESA consultation on land-management activities (NMFS 1997c). The NMFS has applied the concept of properly functioning habitat condition to assess the quality of the habitat that fish need to survive and recover. This concept is discussed in the next section.

Site-specific environmental baseline descriptions and effects determinations were made by BLM personnel for each of the proposed timber sales. This information is found in the project-level Matrices of Pathways and Indicators which were included in the BA. In addition, watershed-level information on anadromous salmonid habitat is provided in the fifth field Matrix of Pathways and Indicators also

included in the BA. NMFS concurred with these project and watershed-scale environmental baseline descriptions and effects determinations (exceptions are noted below) in the streamlined consultation process and NMFS considered them in addition to the broad-scale analysis conducted for NMFS (1997c).

Evaluation of Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA as defined by the consultation regulations, 50 CFR Part 402. NMFS (1997a) describes how NMFS applies the ESA jeopardy and destruction/adverse modification of critical habitat standards to consultations for Federal land management actions in the Umpqua River basin.

As described in NMFS (1997a), the first steps in applying the ESA jeopardy standards are to define the biological requirements of UR cutthroat trout, OC coho salmon, and OC steelhead and to describe the species' current status as reflected by the environmental baseline. In the next steps, NMFS' jeopardy analysis considers how proposed actions are expected to directly and indirectly affect specific environmental factors that define properly functioning aquatic habitat essential for the survival and recovery of the species. This analysis is set within the dual context of the species' biological requirements and the existing conditions under the environmental baseline (defined in NMFS 1997b). The analysis takes into consideration an overall picture of the beneficial and detrimental activities taking place within the action area, which is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). If the net effect of the activities is found to jeopardize the listed species, then NMFS must identify any reasonable and prudent alternatives to the proposed action.

Biological Requirements. For this consultation, NMFS finds that the biological requirements of UR cutthroat trout, OC coho salmon, and OC steelhead are best expressed in terms of current population status and environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of the species. The NMFS defines this properly functioning condition as the state in which all of the individual habitat factors operate together to provide a healthy aquatic ecosystem that meets the biological requirements of the fish species of interest. Individual, measurable habitat factors (or indicators) have been identified (e.g., water temperature, substrate, etc.), and the properly functioning values for these indicators have been determined, using the best scientific information available. These indicators, when considered together, provide a summary of the conditions necessary to ensure the long-term survival of aquatic species.

The NMFS has assembled a set of these indicators in a form called the Matrix of Pathways and Indicators (MPI) (NMFS 1996). The MPI is a table that lists several categories or "pathways" of essential salmonid habitat, such as water quality, instream habitat elements, and flow/hydrology. Under these pathways are quantitative habitat indicators for which ranges of values are identified that correspond to a "properly functioning" condition, an "at risk" condition, and a "not properly

functioning" condition. Because these habitat measurements are more readily available than quantitative measurements of biological variables such as incubation success, standing crop, and growth rate, the NMFS and BLM are able to assess the health of stream reaches or watersheds based on the condition of their component indicators. Such an assessment provides a baseline description of the health of the stream/watershed, and also allows the effects of an action (e.g., a timber sale) to be evaluated.

Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are necessary for the survival and recovery of the listed species. It follows, then, that the NMFS has determined that an action which would cause the habitat indicators of a watershed to move to a degraded condition, or one which further degrades a "not properly functioning" watershed, is also likely to jeopardize the continued existence of the listed species.

In addition to the use of the MPI at the watershed level to assist in making "jeopardy" determinations in Section 7 consultations (especially for land management agencies), the NMFS also uses the MPI at the site or project scale. Assuming that a Federal agency determines that an action is a "may affect," either informal or formal consultation is required. To assist in this determination, the action agency prepares a project-level MPI. If no "degrades" occur at this scale, then the action is probably not likely to adversely affect individuals of a listed species, and an informal Section 7 consultation is appropriate. If the proposed action degrades any of the indicators at this smaller scale (often the sixth or seventh field HUC), then the action is generally considered to be a "likely to adversely affect," and formal consultation must occur.

Current range-wide status of listed species under environmental baseline. NMFS described the current population status of UR cutthroat trout in its status review (Johnson *et al.* 1994) and in the final rule (August 9, 1996, 61 FR 41514); critical habitat for UR cutthroat trout was designated by NMFS on January 9, 1998 (63 FR 1338). NMFS proposed on April 5, 1999 (64 FR 16397), to de-list this ESU because recent genetic information supports its inclusion in a larger Oregon Coast ESU, which is not thought to be in danger of extinction. NMFS described the current population status of OC coho salmon in a status review (Weitkamp *et al.* 1995), and in the final listing rule (August 10, 1998, 63 FR 42587). Critical habitat for this ESU was proposed on May 10, 1999 (64 FR 24998). The recent range-wide status of OC coho salmon is summarized in NMFS (1997b). The current population status of OC steelhead is described in Busby *et al.* (1996), and in the final rule in which the NMFS determined that the status of the ESU did not warrant listing (63 FR 13347).

Current status of listed species under environmental baseline within the action areas. As noted above, the "action area" includes all areas directly or indirectly affected by the proposed action. The general action areas for this Opinion can be defined as the Middle Umpqua River and Mill Creek watersheds.

As noted above, UR cutthroat trout, OC coho salmon, and OC steelhead use the action areas for rearing, feeding, spawning, incubation, and migration. The environmental baseline of the action areas are dominated by conditions rated largely as “not properly functioning” or “at risk” (see watershed MPIs in BA). These conditions are primarily the result of past forest management and agricultural practices, in particular, timber harvest/clearing within riparian zones, large-scale clear-cut timber harvest, road construction (especially within riparian zones), and timber yarding in riparian zones and streams.

Indicators particularly at issue in this consultation are those which would likely be degraded by the proposed actions at the project scale, although the NMFS has also reviewed the BLM’s “maintain” and “restore” effects determinations. For the projects reviewed in this biological opinion, “turbidity” was determined to be degraded at the project scale by one of the actions. The environmental baseline for the “turbidity” indicator for the Middle Umpqua River watershed-scale MPI was listed by the BLM as “at risk.”

Based on the best information available on the current status of UR cutthroat trout, OC coho salmon, and OC steelhead (NMFS 1997b), NMFS assumptions given the information available regarding population status, population trends, and genetics (NMFS 1997a), and the relatively poor environmental baseline conditions within the action areas (see MPIs in BA and UR cutthroat trout and OC coho salmon final listing rules and OC steelhead proposed listing rule), NMFS finds that the environmental baseline does not currently meet all of the biological requirements for the survival and recovery of the listed species within the action area. Actions that do not retard attainment of properly functioning aquatic conditions, when added to the environmental baseline, are necessary to meet the needs of the species for survival and recovery.

Analysis of Effects

The effects determinations in this opinion were made using a method for evaluating current aquatic conditions (the environmental baseline) and predicting the effects of the actions on them. This process is described in the document “Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale” (NMFS 1996). This assessment method (in which MPIs are assembled by action agency biologists) was designed for the purpose of providing information in a tabular form for NMFS to determine the effects of actions subject to consultation.

The BLM uses the MPI to make project-level effects determinations: Whether an action is “not likely to adversely affect” (NLAA) or “likely to adversely affect” (LAA) the ESA-listed species (in this case, UR cutthroat trout and OC coho salmon). If any of the indicators is thought to be degraded at the project level by the action, the action is determined to LAA. In turn, if a project was determined to LAA the ESA-listed species, then, based on the “jeopardy” criteria described in NMFS (1997c), the BLM must determine whether the project, when combined with the environmental baseline for the watershed over the long-term, is consistent with the ACS of the NFP. This “consistency” is condensed

to a two-part test in NMFS (1997c) and NMFS (1997a, pg. 14): Is the proposed action in compliance with the standards and guidelines for the relevant land allocation, and does the proposed action meet all pertinent ACS objectives. The determination of consistency with relevant ACS objectives is made with the assistance of the MPI at the watershed scale.

Project-Level Effects. The BLM-provided MPIs for the effects of actions are expressed in terms of the expected effect (“restore,” “maintain,” or “degrade”) on aquatic habitat factors in the project area for each subwatershed (or other project-level spatial scale) affected by the proposed actions. The results of the completed checklist for the proposed action provide a basis for determining the effects of the action on the environmental baseline in the project area.

In this consultation, the BLM provided one project-level MPI for each of the three timber sales. In general, the Umpqua National Forest (UNF) determined that the actions would not degrade indicators at the project level chiefly because of the maintenance/enhancement of the riparian zones.

Bridge. For Bridge, the BLM found that the “turbidity” indicator would be degraded due to the action and all other indicators would be maintained. The BLM attributes the “degrade” checkmark for “turbidity” to a transitory increase in stream sedimentation caused by the culvert replacement aspect of road renovation. In Bridge, as well as the other timber sales in this Opinion, RR buffers and/or road construction/maintenance techniques should prevent most (or all) of the ground-disturbing activities from transmitting substantial amounts of sediment into stream channels.

The Upper Middle Umpqua Subwatershed Washington (BLM 1997) notes that the action area in general is subject to landslides and identifies portions of the Bridge sale units as being mostly at low to moderate landslide risk. The EA for the sale also notes that there is a possibility of mid-slope soil failures in the units due to the loss of root strength following harvest and the steep slopes. The BLM soil scientist believes, however, if the failures were to occur, the resulting debris avalanches should be minor and not travel far. Because of its ridgetop location and temporary nature, the BLM does not believe that the small amount of road construction proposed would increase the likelihood of landslides in the units, and the road renovation should lessen the likelihood of soil failure. Finally, the retention of full RR widths (with the filtering effect of vegetation, woody material, and duff) would make it unlikely that any natural or management-cause landslides would transmit substantial amounts of sediment to stream channels, or if a landslide is large enough to carry to a stream channel, should ensure that substantial amounts of large woody material from the RR and sale unit would accompany the sediment.

The proposed harvest of 84 acres would decrease canopy cover, and thus vegetative hydrologic recovery in the long-term (in Sawyer Creek and an unnamed frontal tributary to the Umpqua River, in the Sawyer Creek sixth field HUC). There should be few, if any, effects on peak streamflows due to the harvest, however, because the low-elevation coastal climate of the project area is not prone to rain-on-snow events. In addition, streams in the Tyee Sandstone physiographic province (where the sale is located), are typically flashy in nature (i.e., prone to rapid and extreme flow fluctuations) because

of high rainfall, high soil infiltration rates, and impermeable bedrock (USFS and BLM 1997, BLM 1995b). Thus, any potential increase in peak flows would likely be within the natural range of variability for the area. Full suspension cable-yarding through non-fishbearing RR should not degrade relevant indicators, because no soil disturbance should occur, and modification of vegetation should be confined to minor limb damage.

Because of the presence of the “degrade” checkmark on the project scale, the BLM determined that the Bridge timber sale is likely to adversely affect UR cutthroat trout, OC coho salmon, and OC steelhead. The NMFS concurs with the BLM on this project-level effects determination.

Sagaberd. For Sagaberd, the BLM found that all indicators would be maintained. Unlike, Bridge, no stream-crossing culverts would be placed or replaced in the semi-permanent road to be constructed or ridge-top road proposed for renovation, so no direct input of sediment to streams should occur. Even in RR thinning areas, the RR buffers and/or road construction/maintenance techniques should prevent most (or all) of the ground-disturbing activities from transmitting substantial amounts of sediment into stream channels.

The Lower Umpqua Frontal WA (BLM 1995a) and the Mill Creek WA (1995c) note that the action area is subject to landslides, but does not specifically identify the area which includes the units of the Sagaberd sale as being particularly vulnerable. The EA for the sale notes that there is a possibility of mid-slope soil failures in the steepest parts of the units. However, if this were to occur, the resulting debris avalanches should be minor and not travel far. There is a lower possibility of more extensive debris torrents. While no road construction would occur, regeneration harvest may alter soil stability. If substantial landslides do occur in the sale units, the RR buffers on the regeneration harvest units (with the filtering effect of vegetation, woody material, and duff) would make it unlikely that any natural or management-cause landslides would transmit substantial amounts of sediment to stream channels. If large landslides do occur, the wide RR should ensure that substantial amounts of large woody material from the RR and sale unit would accompany the sediment. The density management and commercial thinning prescriptions would retain considerable root strength, so these units should not be of substantial increased risk of mass wasting.

The proposed harvest would decrease canopy cover in the short-term in the commercial thinning and density management units, and in the long-term in the regeneration units, but the harvest would not occur in the transient snow zone. Additionally, as noted above under Bridge, Coast Range streams in the Tyee Sandstone physiographic region are naturally flashy and so the decrease in vegetative hydrologic recovery should have little effect on peak streamflows.

The thinning and yarding within RR, while beneficial or neutral in effect in the long-term, is likely to lessen the qualities of the RR for non-aquatic creatures in the short-term. The NMFS agrees with the BLM that the effects of the action should be minor, transitory, and localized, and should not be transmitted to fish-bearing streams. While the proposed thinning is likely to improve habitat for many

RR species (by allowing trees to grow more quickly than if the stand were not thinned), the action would probably have little effect on anadromous fish because of the relatively wide no-cut buffers. It is possible, however, that landslides or debris flows could transport thinning-enhanced large woody debris to stream channels.

Because no “degrade” checkmarks occurred at the project scale, the BLM determined that Sagaberd is not likely to adversely affect UR cutthroat trout, OC coho salmon, or OC steelhead. The NMFS concurs with the BLM on the project-level effects determination for Sagaberd.

House. For House, the BLM found that all indicators would be maintained. No stream-crossing culverts would be placed or replaced in the road. Full RRs should protect streams from sediment input from road-related activity and timber harvest/yarding.

The Upper Middle Umpqua Subwatershed WA (BLM 1997) notes that the action area is subject to landslides, both natural and management-caused, but the EA for the sale notes that much of the most fragile and landslide-prone portions of the sale area would be protected by RR or are otherwise not included in the sale units. In addition, the steepest units would be helicopter-yarded so that soil disturbance would be minimized. Road renovation should reduce the likelihood of mass soil failure. The EA notes the possibility of increased landslide probability in the units, due to the loss of root strength following harvest and the steep slopes, but the retention of full RR widths (with the filtering effect of vegetation, woody material, and duff) would make it unlikely that any natural or management-caused landslides would transmit substantial amounts of sediment to stream channels. If large landslides do occur, the wide RR should ensure that substantial amounts of large woody material from the RR and sale unit would accompany the sediment.

The proposed harvest would decrease canopy cover in the long-term in the sale units, but the harvest would not occur in the transient snow zone. Additionally, as noted above under Bridge, Coast Range streams in the Tyee Sandstone physiographic region are naturally flashy and so the decrease in vegetative hydrologic recovery should have little effect on peak streamflows.

Because no “degrade” checkmarks occurred at the project scale, the BLM determined that Cedar House is not likely to adversely affect UR cutthroat trout, OC coho salmon, or OC steelhead. The NMFS concurs with the BLM on the project-level effects determination for Cedar House.

Watershed-Level Effects. In the BA, the BLM provided watershed-scale MPIs and ACS objective consistency reviews which evaluated each of the three proposed timber sales. (A watershed-scale MPI was not provided by the BLM for the portion of Sagaberd in the Mill Creek watershed, because the action is NLAA the listed species. For the same reason, a Mill Creek 1 watershed-level discussion is not provided below.) The watershed-scale MPIs evaluate the effects of the proposed action on habitat indicators in the fifth field HUC relative to the long-term environmental baseline. While many actions, including those that may be beneficial in the long-term, have short-term,

small-scale adverse effects, only those actions with adverse effects which are significant at the watershed scale over a long period would receive a “degrade” checkmark. It is important to realize that both active and passive restoration activities contribute to the environmental baseline. In particular, the passive restoration that will occur over the long-term (at least a decade, see above), especially in RRs, is a principal component of the watershed recovery aspect of the NFP. The role of RRs, Late Successional Reserves, etc., in restoration of watersheds is described in the NFP Record of Decision (USDA and USDI 1994) and in NMFS (1997c).

The ACS consistency reviews included a description of how the proposed projects compared to the applicable NFP standards and guidelines (S&Gs) for the listed ESUs and how the proposed projects complied with the nine ACS objectives for those ESUs. Because there is strong correspondence between the habitat indicators of the MPI and the ACS objectives, it is likely that if none of the habitat indicators in the watershed level MPI is degraded by an action, then compliance with ACS objectives for the ESUs is also achieved. In the descriptions below, only those MPI habitat indicators which were determined to “degrade” at the project (usually sixth field HUC or subwatershed) scale are discussed.

Middle Umpqua River watershed. Bridge, Cedar House, and most of Sagaberd are proposed for the Middle Umpqua River watershed. A portion of the watershed, the Paradise Creek drainage, is a Tier 1 Key Watershed under the NFP. For this action, the BLM determined that all of the habitat indicators would be maintained at the watershed scale, despite the project-level “degrade” which was recorded in the project-level MPI for the Bridge sale (Sawyer Creek subwatershed). As noted under “Project-level effects,” above, the “turbidity” indicator was thought to be degraded due to culvert replacement during road renovation. In the long-term and on the watershed scale, however, this “degrade” was not thought to be consequential because of its short-term and highly localized nature. The relatively small amount of sediment that is likely to enter watercourses as a result of the proposed activity would not likely be distinguishable from background natural sedimentation and sedimentation from previous human activities. Stream sedimentation occurs under pristine watershed conditions and is usually harmful to the persistence of salmonid populations only when it occurs outside of the natural range of variability on a large spatial scale for long periods. Proper road renovation, in fact, is likely to diminish the potential adverse effects of roads, including turbidity and sedimentation, by allowing the drainage design features to work properly.

The BLM determined that the proposed timber sales have little potential to degrade aquatic and/or riparian habitat. Under other circumstances, however, the disturbance to watersheds caused by road-related activities and tree harvest can affect peak and base flows in streams, which can in turn cause degradation of a number of indicators. For the subject timber sales, BLM hydrologists believe that road-related activities would not substantially affect peak or base flows in the Middle Umpqua River Watershed because the proposed timber sales would not increase permanent road mileage; and the proposed road renovation should increase the effectiveness of road drainage features.

For the timber sales at issue, BLM hydrologists believe that the regeneration harvest will affect the hydrologic characteristics of the project areas by increasing annual yield, low flows, and spring and fall peak flows (but not winter peak flows). This is because regeneration timber harvest has the potential to increase the amount of water available through increased runoff and reduced evapotranspiration rates. Increased base flows would potentially be a beneficial effect for anadromous salmonids, but the increase in base flow volume is not expected to be large or long-term. On the other hand, Coast Range streams in the Tyee Sandstone physiographic region are naturally flashy and so the short-term decrease in vegetative hydrologic recovery should have little effect on peak streamflows; also, no new road crossings or ditchlines would be constructed which could contribute to peak flows. If increases in peak flows would occur, they would have the potential to alter the stream channel through scouring; as noted above, however, the subject timber sales should not increase peak flows to the point of substantially affecting habitat indicators. Bridge, Cedar House, and the portion of Sagaberd timber sale in the watershed (a total of 498 acres of proposed regeneration harvest, and an additional 58 acres to be thinned) would not occur in a transient snow zone, so the reduction in canopy cover would not increase melting rates in rain on snow events. In addition, increased fall and spring peak flows would be smaller than peak flows typically caused by winter storms (that is, they would be within the natural range of variability and therefore would not be channel-altering events) and the stream channels are predominantly bedrock and therefore resistant to erosion.

The BLM considers full vegetative hydrologic recovery in the watershed to occur at age 30. According to the "304" ACS Module (BLM 1998), of the 23% of the Federally-owned watershed in the non-RR GFMA and Connectivity land designation, (and subtracting the on-going 145-acre Sagaview regeneration harvest timber sale) 3,408 acres (64.0%) was greater than 30 years of age, and the majority of 474 acres of 15-29 year-old timber will mature into full hydrologic recovery in the next decade. While the proposed regeneration harvest will reduce the amount of hydrologically recovered Federal forest land in the watershed, in the long-term (the next 10 years), a net gain of more than 2,000 acres will occur on non-RR GFMA/Connectivity lands. In addition, 13,332 acres of hydrologically recovered lands not eligible for regeneration harvest now exist, and most of an additional 1,974 acres of these land designation will mature into hydrologic recovery in the next decade. Thus, even if the BLM regeneration harvests 1,000 acres in the next decade (somewhat more than is projected in the ACS Module), vegetative hydrologic recovery on the Federal ownership of the watershed will increase from about 74% to roughly 76% (stands with partial hydrologic recovery are not included in this figure, but would increase the total amount of vegetative hydrologic recovery). The Federal acreage of stands currently in excess of 30 years-old in the Wells Creek subwatershed was shown as about 36% in the "304" WA module (BLM 1998a). Equivalent numbers for the other four subwatersheds are: Luchsinger, 76%; Wells, 82%; Butler, 80%; and Paradise, 79%.

In addition, the amount of canopy cover removed during the proposed sales is small when compared to the long-term baseline in the watershed. According to the "304" ACS Module (BLM 1998), Federal ownership in the watershed is 22,934 acres. Of this total, 77% is ineligible for further regeneration harvest (49% is RR, another 28% is non-RR Late Successional Reserve). Therefore, more than three-

fourths of the Federal forest land in the watershed (including all of the RR, which is the most important portion from an anadromous fish viewpoint) will be protected from non-restorative activities, so that the relatively small amounts of regeneration harvest, etc. proposed for GFMA lands should not retard the recovery of the watershed as a whole.

Because Federal land comprises only about 36% of the total watershed, the proposed management of this land is expected to have limited effects on watershed health. On the other hand, the proposed action should not reduce watershed-scale long-term hydrologic recovery and should reduce long-term stream sediment input and improve long-term RR conditions without substantial short-term adverse effects. Thus, when the proposed actions are considered in the context of baseline conditions and foreseeable passive restoration of a large majority of the Federal portion of the watershed, recovery of the watershed should not be retarded.

Based on the EA and the ACS objective consistency reviews for Bridge, Sagaberd, and Cedar House, it appears that all of the relevant S&Gs would be observed by the BLM and that compliance with the nine ACS objectives is adequately described by the BLM. Compliance with the sixth objective, “maintain and restore instream flows...” is discussed in the previous paragraphs. The proposed timber sales appear to be consistent with WA recommendations. In particular, the proposed RR commercial thinning in Sagaberd is compliant with S&G TM-1 because it should hasten the establishment of late seral habitat. The Lower Umpqua Frontal WA (BLM 1995b) does not specifically recommend that the BLM actively manage riparian buffers through commercial thinning to increase the rate of attainment of a late successional habitat forest condition in the riparian zone, but does say that the desired condition of the riparian zone should be late successional forest conditions; the RR thinning in Sagaberd should accelerate the attainment of these conditions. The use of helicopter yarding to avoid road construction in House is consistent with the Paradise Creek subwatershed’s status as a Tier 1 key watershed.

Effects Summary. NMFS has considered the applicability of these site and watershed scale analyses to each of the timber sales identified in the BA and in this letter. The NMFS is not aware of any other special characteristics of the particular sales that would cause greater or materially different effects on the subject salmonid species and their habitat than is discussed in these analyses. Similarly, NMFS is not aware of any newly available information that would materially change these effects analyses. In that substantial portions of all of the watersheds discussed in this Opinion are privately-owned, the NMFS assumes that the cumulative effects of non-Federal land management practices will continue at similar intensities as in recent years (NMFS 1997c, pages 41-42).

The effects of the timber sales (and associated road-related activities) on UR cutthroat trout, OC coho salmon, OC steelhead and their habitat are presented in the BA prepared by the BLM, specifically in the project and watershed-level MPIs, ACS objective consistency reviews, WAs, and EAs. NMFS finds those descriptions to be adequate for this analysis. Based on this information, the NMFS does not consider these actions to be likely to result in more effects than expected or considered in the

NMFS (1997c). In particular, the BLM determined, and the NMFS concurred, that relevant NFP S&Gs would be followed, and that ACS objectives would be met at the watershed scale and in the long term when the effects of the proposed timber sales are combined with the environmental baseline. This ACS consistency determination was made because the BLM showed that, despite their proposed actions, watershed habitat indicators would be maintained over the long-term.

The NMFS expects that ACS objectives which may be affected by the subject actions will be met for the following reasons: (1) Potential sediment input from the small amount of proposed temporary and semi-permanent road construction will be minimized by implementation of appropriate mitigation measures, the temporary and semi-permanent roads would not occur in riparian areas, and no new permanent roads will be constructed; (2) potential sediment input from proposed road renovation will also be minimized by implementation of appropriate Best Management Practices and the long-term effects of these actions should be beneficial because of lessened sediment and hydrologic effects from existing roads; (3) thinning in RR in Sagaberd will accelerate attainment of large trees to serve as a future source of large woody debris otherwise, no timber harvest would occur in RR; (4) the ground compacting activity (partial suspension and tractor yarding) will be mitigated through ripping and water-barring of skid trails, and none of the hauling and yarding activity (except for limited full-suspension cable yarding and that associated with riparian thinning) will occur in RRs; and (5) the amount of canopy cover removed in the timber sales should not affect peak streamflows outside of the natural range of variability, would be small compared to the passive restoration which would occur in the watersheds over the long-term, and should not impair recovery of the watersheds. Despite the minor short-term adverse effects, these actions maintain or restore essential habitat functions and will not impede recovery of salmonid habitat, a long-term goal of the NFP.

Section 7(a)(2) Determinations

The NMFS concludes that the effects of these proposed site specific actions, when added to the environmental baseline and cumulative effects occurring in the relevant action areas, they are not likely to jeopardize the continued existence of UR cutthroat trout, OC coho salmon, or OC steelhead trout.

Additionally, the NMFS concludes that the proposed actions would not cause adverse modification or destruction of UR cutthroat trout critical habitat or OC coho salmon proposed critical habitat. This is because our “no jeopardy” conclusion is based on the effects of the actions on salmonid habitat and because the “adverse modification or destruction of habitat” standard is defined similarly to the “jeopardy” standard. Because we have determined that the actions would not jeopardize the continued existence of UR cutthroat trout or OC coho salmon, it follows that critical habitat for these species would not be adversely modified or destroyed. In other words, the MPIs include critical habitat elements and it was determined that these

elements would not be degraded at the watershed scale (see above under “Biological Requirements”). In reaching these conclusions, NMFS has utilized the best scientific and commercial data available as documented herein and by the BA and documents incorporated by reference.

Incidental Take Statement

Effects resulting from road renovation are expected to be the only source of incidental take associated with the proposed timber sales covered by this Opinion. Because of the limited amount of road renovation and location of the road, and the implementation of appropriate mitigation measures for the culvert replacement activities, sediment impacts are expected to be minimized. Effects of harvesting in RR are also expected to be minimal or non-existent because of location, land form, and harvest method. The NMFS expects that the incidental take associated with the other effects (discussed in NMFS 1997c) of the subject timber sales will also be minimal or non-existent.

Adverse effects of management actions such as these are largely unquantifiable in the short-term, and may not be measurable as long-term effects on the species’ habitat or population levels. Therefore, even though the NMFS expects some low level of incidental take to occur due to these actions, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species themselves. The adverse effects of the actions, however, should be confined to the sub-watersheds in which the actions are proposed to occur.

The incidental take statement in NMFS (1997c, *pages 65 and 70-72*) provided reasonable and prudent measures and terms and conditions to avoid or minimize the take of listed salmonids from actions involving road construction that may be applied to site specific actions if appropriate. NMFS hereby applies the findings, reasonable and prudent measures, and terms and conditions set forth in the Incidental Take Statement of NMFS (1997c) to the site specific road construction action described in this Opinion. This incidental take statement applies only to listed UR cutthroat trout and OC coho salmon; it does not authorize incidental take of candidate OC steelhead. Should OC steelhead become listed under the ESA, NMFS expects that this opinion will be the basis of a biological opinion for this species. In addition, this incidental take statement would become effective for OC steelhead following NMFS’ adoption of this opinion as the biological opinion for this species.

To the minimal extent that incidental take may result from the non-road construction aspects of the subject timber sales (i.e. change in peak and base flow), NMFS finds that it is appropriate to prescribe reasonable and prudent measures, with terms and conditions, to further minimize or avoid such incidental take. Based on the effects analysis presented in NMFS (1997c), NMFS finds that the measures, terms, and conditions proposed in that document are appropriate for these actions. Therefore, NMFS further authorizes such minimal incidental take, provided that the Coos Bay BLM complies with those measures, terms, and conditions.

Conclusions

This concludes formal consultation on these actions in accordance with 50 CFR 402.14(b)(1). The Coos Bay BLM must reinitiate this ESA consultation if: (1) the amount or extent of taking specified in the incidental take statement above is exceeded, (2) new information reveals effects of the action that may affect listed species in a way not previously considered, (3) the action is modified in a manner that causes an effect to the listed species that was not previously considered, or (4) a new species is listed or critical habitat designated that may be affected by identified action.

If you have any questions, please contact Dan Kenney of my staff at (541) 957-3385.

Sincerely,


for William Stelle, Jr.
Regional Administrator

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